

REMARKS

Reconsideration of the present application is requested on the basis of the following particulars:

1. Information Disclosure Statement

An information disclosure statement is provided herewith submitting prior art references cited in the International Search Report for WO 00/14689 and the German Search Report for DE 198 40 482.2. The present application claims the benefit of priority from DE 198 40 482.2 and is the U.S. National Stage application of EP 99/06027.

Applicants would like to point out that also included on PTO-1449 form is GB 1 326 665 which is an English language equivalent to DE 2 037 755 cited in the Office Action against the claims of the present invention.

2. Claim Objections

Claims 24-46 have been amended to correct the informalities identified in the Office Action. More specifically, claim 24 has been corrected to recite "paper of value" consistently throughout the claims, and the grammatical errors identified in the Action have been corrected. Furthermore, the expression "characterized by" has been removed from claim 39 and the claim has been amended to correctly recite the inventive detector arrangement described therein.

It will be noted that all of the reference numerals in the claims have been removed.

Applicants submit that the amendments to the claims avoid the objections identified in the Action. Acceptance of these changes is respectfully requested.

3. Rejection of Claims 24-46 under 35 U.S.C. § 112, second paragraph

Claims 24-46 have been amended to overcome the rejection based on 35 U.S.C. § 112, second paragraph. More specifically, the claims have been amended to provide sufficient antecedent support for the following elements recited in the claims: bright field, radiation source, dark field, detected first and second areas, connecting line, light reflected, intersection point, first detector, and second detector. Furthermore, the term "effected," which was originally used throughout the claims, has been replaced by the term "performed."

It will be noted that the first and second detectors recited in claim 46 have antecedent basis in claim 44, wherein claim 46 indirectly depends from claim 44 through its dependency on claim 45.

In view of the amendment to the claims, Applicants submit that the amended claims comply with 35 U.S.C. § 112, second paragraph. Accordingly, withdrawal of the rejection is respectfully requested.

4. Rejection of Claims 24, 26, 27, 36, 37, 38, 39, 44 and 46 under 35 U.S.C. § 102(b) as being anticipated by DE 2037755 (Wildenrath)

It will be noted that the Office Action indicates that this present rejection is based on 35 U.S.C. § 103(b). Due to the context of the rejection, Applicants will treat this rejection as a rejection under 35 U.S.C. § 102(b) since it appears that there was a typographical error.

Claims 24, 26, 27, 36, 37, 38, 39, 44 and 46 presently stand rejected as being anticipated by the disclosure of Wildenrath. Applicants respectfully traverse this rejection on the basis that Wildenrath fails to disclose or suggest the inventive aspects of the present invention, as will be discussed below. Claim 24 is an independent method claim, and claims 26, 27, 36 and 37 are either directly or indirectly dependent therefrom. Claim 39 is an independent apparatus claim, and claims 44 and 46 are dependent therefrom.

a. Present Invention Summarized

The present invention recited in claim 24 is directed to a method for testing a paper of value. The method includes the steps of:

a) irradiating the paper of value located in a measuring plane in first and second areas, the second area being identical, in overlap or adjacent with the first area;

b) detecting the radiation transmitted through the paper of value in a bright field in the first area by means of a detector located in the direct radiation range of the radiation source;

c) detecting the radiation transmitted through the paper of value in a dark field in the second area by means of a detector located outside the direct radiation path of the radiation source;

d) repeating steps a) to c) with respect to other first and second areas of the paper of value;

e) evaluating the transmitted radiation detected in the first and second areas;
and

f) comparing the evaluation results from the detection of the radiation in the first and second areas and determining whether paper of value material is present in said areas.

The present invention is also embodied as an apparatus, as recited in claim 39 of the present application. In reference to FIGS. 1-4 of the present invention, the apparatus comprises:

a measuring plane;

a device for translationally moving a paper of value in the measuring plane;

at least one radiation sources for irradiating the paper of value located in the

measuring plane in first and second areas, the second area being identical in overlap or adjacent with the first area;

at least one detector disposed in the direct radiation range for detecting the radiation transmitted from the radiation source through the paper of value in the first irradiated area of the measuring plane in the bright field, and a detector disposed outside the direct radiation output for detecting the radiation transmitted through the paper of value in the second irradiated area of the measuring plane in the dark field;

and an evaluation unit connected to said detectors and arranged to evaluate the transmitted radiation detected in the first and second areas and compare the evaluation results.

b. Reference Distinguished

As indicated above in the explanation on the Information Disclosure Statement, Applicants submit herewith GB 1 326 665 which is an English language equivalent to DE 2 037 755 cited in the Office Action against the claims of the present invention. It will be noted that the drawing figures 1-5 in GB 1 326 665 are identical to those in DE 2 037 755. In the following remarks, Applicants will make reference to the disclosure of GB 1 326 665 and refer to both GB 1 326 665 and DE 2 037 755 as the disclosure of Wildenrath.

Wildenrath discloses a method and apparatus for determining the authenticity of bank notes having a fluorescent material or characteristic. In observing Fig. 3, a bank note is exposed on one side to radiation exciting fluorescent substances on the note which results in fluorescent radiation FS emitted by the note to be detected on both sides of the note. The detectors 3, 9 for detecting fluorescent radiation are disposed in the dark field with respect to the excitation radiation source 2. When detecting a bank note, the output signals of the detectors 3, 9 are checked as to their coincidence (page 4, lines 98-105).

Another detector 13 is positioned in the bright field on the side of the bank note opposite the excitation radiation source, and is arranged to detect the exciting radiation AS. The detector 13 in the bright field recognizes cracks or inaccurate scans, and rejection of the bank note occurs if a signal is below a lower threshold or is above an upper threshold (page 4, line 115 through page 5, line 12).

It will be understood that in the teachings of Wildenrath, fluorescent radiation FS should not be confused with exciting radiation AS since the fluorescent radiation is emitted from the bank note due to the exciting radiation.

Thus it is readily apparent that in the teachings of Wildenrath that the decision on rejecting the bank note is made on the basis of the exciting radiation detected by the detector positioned in the bright field which is independent from the determination of the coincidence of the signals in the dark field.

Turning to the claims of the present invention, it will be noted that in step (c) of claim 24 the radiation transmitted through the paper of value in a dark field in the second area is detected by a detector located outside the direct radiation path of the radiation source. As is readily evident from the discussion above on the teachings of Wildenrath, the exciting radiation is only detected in the bright field. Similarly, claim 39 of the present application also recites a detector that is disposed outside the direct radiation output for detecting the radiation transmitted through the paper of value in the second irradiated area of the measuring plane in the dark field. Thus, Wildenrath does not disclose or suggest using a detector to detect exciting radiation in a dark field, and instead, only places detectors arranged to detect fluorescent radiation in the dark field.

Moreover, steps (e) and (f) of claim 24, and the description of the elements of the apparatus in claim 39 recite that the transmitted radiation detected in the first and second areas is evaluated and compared to determine whether paper of value material is present in said areas. According to the teachings of Wildenrath, it is quite clear that the signals of the detectors 3, 9 and the signal of the detector 13 are not

compared with one another. Unlike in the present invention where the bright and dark fields are compared with one another, in the disclosure of Wildenrath the signals of the detectors 3, 9 which detect the radiation in the dark field are checked as to their coincidence, whereas the signal of the detector 13 is compared to specific threshold levels. Thus, Wildenrath fails to disclose or suggest the comparing and evaluating results from both the bright and dark fields.

Thus, in view of the above-observations, Applicants submit that the disclosure of Wildenrath fails to disclose or suggest each and every step of the method recited in claim 24 of the present application, and each and every element of the apparatus recited claim 39 of the present application. Accordingly, Applicants respectfully request removal of this rejection.

5. Rejection of Claims 25, 28-35, 40-43, 45 under 35 U.S.C. 103(a) as being unpatentable over DE 2037755 (Wildenrath)

Claims 25, 28-30, 40-43 and 45 presently stand rejected as being unpatentable over the teachings of Wildenrath. Claims 25 and 28-35 are dependent from claim 24, and claims 40-43 and 45 are dependent from claim 39. In view of the above-observations on claims 24 and 39, Applicants respectfully traverse this rejection on the basis that Wildenrath fails to disclose or suggest the method of claim 24 and the apparatus of claim 39.

Claims 25 and 28-35 are thus patentable based on their dependency from claim 24 and their individually recited method steps or features. Claims 40-43 and 45, which depend from claim 39, are also patentable based on their dependency from claim 39 and their individually recited elements and features. Accordingly, Applicants respectfully request removal of this rejection.

6. Conclusion

In view of the amendment to the claims, and further in view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance.

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Art Unit: 2878

Accordingly, it is respectfully requested that claims 24-46 be allowed and the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the Applicants' Attorney, the Examiner is invited to contact the undersigned at the numbers shown below.

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Respectfully submitted,

A handwritten signature in black ink, appearing to read "Justin J. Cassell", written over a horizontal line.

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